

Pack It Up!

What Will Fit?

The Geometrics Stage Crew now has to transport the painted props of a rectangular prism, a cylinder, and a square pyramid to the concert. They have to make sure the van they have is big enough to carry the props. To do this, they are going to **measure the volume of the cargo space and compare that to the volume of the three objects they have.**



THE DIMENSIONS OF THE OBJECTS AGAIN ARE:

Rectangular Prism: height = 7 feet, width = 4 feet, and length = 3 feet

Cylinder: radius = 3.5 feet and height = 7 feet

Square Pyramid: base length = 4, base width = 4, a slant height of 7.28 feet, and a height of 7 feet

- 1** First, get the complete volume of all the objects combined.
 - a. What is the volume of the rectangular prism? _____
 - b. What is the volume of the cylinder? (Give the decimal answer and then round it to the nearest cubic foot.) _____
 - c. What is the volume of the square pyramid? _____
 - d. What is the total volume of all the objects combined, rounded to the nearest foot? _____
- 2** The van cargo space measures 8 feet tall by 5 feet wide by 13 feet deep. What is the volume of the cargo space?
- 3** Based on the volume measurements, can you estimate if the objects will fit in the van?

BONUS:

Based on volume, would there still be room for the cone from the bonus section of Worksheet 2? The radius of the cone = 3.5 feet and height = 7 feet and slant = 7.8 feet. To calculate the volume (cubic measurement) of the cone, you need to learn a new formula: $V = \pi \cdot \frac{1}{3} \cdot r^2 \cdot h$.

